

REMARKS

Reconsideration of the application is requested.

Claims 10-21 remain in the application. Claims 10-21 are subject to examination. Claims 10, 11, 17, 19, and 21 have been amended.

Under the heading "Claim Objections" on page 2 of the above-identified Office Action, the Examiner objected to claim 19 because the word "each" appears twice and because there is no period.

Applicants appreciate the indication of the informalities and the Examiner's suggested corrections have been made. Claims 17 and 21 have also been amended to correct the spelling of "according".

Under the heading "Claim Rejections – 35 USC § 103" on page 3 of the above-identified Office Action, claims 10 and 12-21 have been rejected as being obvious over Published German Patent Application DE 19 944 733 corresponding to U.S. Patent No. 6,563,252 to Schrod in view of U.S. Patent No. 6,330,510 to Takaku et al. under 35 U.S.C. § 103.

Claims 10 and 19 have been amended to better define the invention. Support for the changes can be found by referring to the translated specification at page 2, line 25 through page 3, line 6, at page 3, lines 16-17, and at page 5, lines 1-15, for example. Claim 11 has been amended to be consistent with the

changes to claim 10 and support for the changes is believed to be inherent in claim 11 as originally presented.

Claim 10 defines a step of: selectively charging and/or discharging the actuator to move the actuator from any one of a plurality of different open valve positions to any other one of the plurality of open valve positions without discharging the actuator to move the actuator into a closed position.

Similarly claim 19 defines a controller for controlled charging and/or discharging of the actuator to move the actuator from any one of a plurality of different open valve positions to any other one of the plurality of open valve positions without discharging the actuator to move the actuator into a closed position.

In contrast to the invention as defined by claims 10 and 19, Schrod only teaches going from a closed valve position to a predetermined open valve position and back to the closed valve position (see Fig. 2). The actuator P_n is held at the single desired open position during a lengthy hold phase by insuring that the actuator voltage U_p does not drop below a threshold voltage due to discharging that occurs via parasitic resistances (column 5, lines 50-57). The actuator voltage U_p is not somehow controlled to charge or discharge the

actuator P_n from one open position to another open position, but rather is used to maintain the current open valve position.

In contrast to the invention as defined by claims 10 and 19, Takaku et al. do not teach selectively charging and discharging a valve actuator from any one of a plurality of different open valve positions to any other one of the plurality of open valve positions. The Takaku et al. teaching merely relates to a diagnosing system that compares combustion conditions controlled by two different air-fuel control components in order to diagnose a malfunction of a fuel supply component.

Under the heading "Claim Rejections – 35 USC § 103" on page 9 of the above-identified Office Action, claim 11 has been rejected as being obvious over obvious over Published German Patent Application DE 19 944 733 corresponding to U.S. Patent No. 6,563,252 to Schrod in view of U.S. Patent No. 6,330,510 to Takaku et al. and further in view of Published U.S. Patent Application Publication No. 2001/0035465 A1 to Shinogle et al. under 35 U.S.C. § 103.

As previously discussed, neither Schrod nor Takaku et al. teach or suggest the limitations of claims 10 and 19 that have been copied above.

In contrast to the invention as defined by claims 10 and 19, the actuator taught by Shinogle et al. must be de-energized to the closed state between

injection events (See paragraph 0018). Also see Figs. 2 and 3, which show that, between the small pilot injection and the ramp shaped main injection, the actuator voltage returns to the de-energized state (Fig. 2) and the actuator returns to the closed position (Fig. 3). In other words, the actuator of Shinogle et al. must go from an open state to the closed state and then to another open state.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claims 10 or 19. Claims 10 and 19 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claim 10 or 19.

In view of the foregoing, reconsideration and allowance of claims 10-21 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

Please charge any fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner Greenberg Stermer LLP, No. 12-1099.

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Respectfully submitted,

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